

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/059111 A2**

(51) International Patent Classification<sup>7</sup>: C12N

Brook, NY 11790 (US). GROLLMAN, Arthur [US/US];  
14 Childs Lane, Setauket, NY 11733 (US).

(21) International Application Number:  
PCT/US2004/042504

(74) Agent: WHITE, John, P.; Cooper & Dunham LLP, 1185  
Avenue of the Americas, New York, NY 10036 (US).

(22) International Filing Date:  
17 December 2004 (17.12.2004)

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/530,555 17 December 2003 (17.12.2003) US

(71) Applicants (for all designated States except US): THE  
TRUSTEES OF COLUMBIA UNIVERSITY IN THE  
CITY OF NEW YORK [US/US]; West 116th Street and  
Broadway, New York, NY 10027 (US). THE RESEARCH  
FOUNDATION OF STATE UNIVERSITY OF NEW  
YORK [US/US]; Office of Technology Licensing and In-  
dustry Relations N5002 Melville Library, Stony Brook,  
NY 11794-3369 (US).

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BRINK, Peter, R.  
[US/US]; 101 Dyke Road, Setauket, NY 11733 (US).  
ROSEN, Michael, R. [US/US]; 25 East 86th Street,  
New York, NY 10028 (US). ROBINSON, Richard, B.  
[US/US]; 67 Roosevelt Street, Cresskill, NJ 07626 (US).  
COHEN, Ira, S. [US/US]; 23 Hawks Nest Road, Stony

Published:

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: DELIVERY OF DNA OR RNA VIA GAP JUNCTIONS FROM HOST CELLS TO TARGET CELLS AND A CELL-  
BASED DELIVERY SYSTEM FOR ANTISENSE OR siRNA

(57) Abstract: A method of delivering an oligonucleotide or a plasmid expressing an oligonucleotide into a target cell comprises  
introducing an oligonucleotide into a donor cell, particularly a stem cell, and contacting the target cell with the donor cell under  
conditions permitting the donor cell to form a gap junction with the target cell, whereby the oligonucleotide or a product of the  
oligonucleotide is delivered into the target cell from the donor cell.

WO 2005/059111 A2